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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,897

03/30/2004

Bruce W. Tryon

5704.00209

2896

26659 7590 04/16/2008  
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EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT

PAPER NUMBER

3661

MAIL DATE

DELIVERY MODE

04/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/708,897	<b>Applicant(s)</b> TRYON, BRUCE W.	
	<b>Examiner</b> CHRISTINE M. BEHNCKE	<b>Art Unit</b> 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 1/21/2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 24-46 and 48-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-14, 16-23 and 47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/21/2008</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This office action is in response to the Amendment and Remarks 1/21/2008, in which claims 12-14, 16-23, and 47 were presented for examination.

#### ***Response to Arguments***

Applicant's arguments filed 1/21/2008 have been fully considered but they are not persuasive. Regarding the reference Vickers, Applicant contends the reference does not teach or suggest determining a destination inferred from at least one location in view of previously stored driving pattern. Applicant specifically contends that the reference would require undue experimentation. The Examiner respectfully disagrees. Vickers teaches that the destination can be determined manually by the user or by using artificial intelligence using stored trip history database. Although the description is broad it is enabled as artificial intelligence was a very well known computer science means of problem solving and considering the vehicle control art is one of a high level of ordinary skill, it would be obvious to try and use ordinary experimentation and adaptation known to one of ordinary skill in the vehicle engineering art.

Applicant's arguments with respect to amended claim 23 have been considered but are moot in view of the new grounds of rejection.

#### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 12-22 and 47** are rejected under 35 U.S.C. 102(e) as being anticipated by Vickers, US 2004/0204797.

(Claims 12 and 47) Vickers discloses a method and system of controlling a hybrid electric vehicle, wherein said hybrid vehicle incorporates a power generator (engine 12), an energy storage device (storage cell 16), wherein the hybrid vehicle is adapted to provide for selectively using power generated by the power generator to charge the energy storage device with stored energy ([0003]); a traction motor (motor 14), wherein the hybrid electric vehicle is adapted to provide for selectively operating the traction motor from power generator and/or power from a discharge of the stored energy from the energy storage device ([0004]); a vehicle location sensor, wherein the vehicle location sensor generates at least one measure of location of the vehicle (GPS 64); a computer adapted to execute a stored program (circuit 18); a memory operatively associated with the computer, wherein the stored program is adapted to record in the memory information related to a destination of the hybrid electric vehicle (memory 36, figure 2); and further comprising: determining at least one location of the hybrid electric vehicle (step 106, figure 3); determining a measure responsive or related to an amount of energy required for said hybrid electric vehicle to reach a destination, wherein said measure is responsive to said at least one location of said hybrid electric vehicle in relation to said destination (step 108, [0025]); and said destination is automatically determined responsive to a driving pattern of said hybrid electric vehicle inferred from said at least one location in view of information related to previously stored driving pattern for said hybrid electric vehicle ([0024]); at least reducing the power generated by said power generator responsive to said measure in advance of said hybrid electric vehicle reaching said destination (steps 110 to 104,[0025]); and continuing travel of said

hybrid electric vehicle to said destination at least using said traction motor powered by said energy storage device ([0025]).

(Claim 13) Vickers further discloses wherein said at least one location of the hybrid electric vehicle is determined with a vehicle location sensor in the hybrid electric vehicle ([0023]).

(Claim 14) Vickers further discloses wherein said vehicle location sensor comprises at least one of a GPS navigation system, an inertial navigation system, a dead reckoning navigation system, and a map matching navigation system ([0023]).

(Claim 16) Vickers further discloses wherein the measure is responsive to a distance of said hybrid electric vehicle to said destination along a predicted route to said destination ([0022], [0024]).

(Claim 17) Vickers further discloses wherein said measure is responsive to an estimate of energy required to reach said destination along a predicted route to said destination ([0025]-[0026]).

(Claim 18) Vickers further discloses wherein said measure is responsive to previously stored information corresponding to said at least one location of said hybrid electric vehicle for subsequent travel along a predicted route to said destination ([0024], trip history database 40).

(Claim 19) Vickers further discloses wherein said previously stored information is responsive to the energy that had been required during at least one previous trip to reach said destination along the predicted route to said destination ([0017], [0022]).

(Claim 20) Vickers further discloses wherein said previously stored information is responsive to an average of a plurality of previous trips from said at least one location of said hybrid electric vehicle to said destination along a predicted route to said destination ([0026]).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Vickers in view of Tamai et al., US 6,307,277.

Vickers discloses the method of controlling a hybrid electric vehicle as previously applied to claim 12, further Vickers discloses using a conventional engine shutdown circuit to enable and disable the engine ([0018]). As Tamai describes, a conventional and inherent means of shutting down the engine is by controlling the fuel flow to the engine. Tamai explicitly describes causing a fuel flow to a power generator and generating power with the power generator responsive thereto (column 3, lines 18-31), wherein the operation of at least reducing the power generated by the power generator comprises decreasing and shutting off the fuel flow to the power generator (column 3, lines 52-65). It would have been clearly obvious and was very well known in the vehicle control art to control the engine load by controlling the fuel flow to the engine. As Tamai explicitly teaches, by controlling the fuel flow and thereby the engine during periods of travel, increases the efficiency of the hybrid by decreasing the amount of fuel used (column 3, lines 1-10).

***Claim Rejections - 35 USC § 103***

**Claim 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over Vickers in view of Kamen, US 2003/0230440, and in further view of Tamai et al., US 6,307,277. Vickers discloses a method of controlling a hybrid vehicle wherein the hybrid vehicle incorporates a power generator, an energy storage device and a motor (figure 1); determining at least one location of the hybrid electric vehicle (step 106, figure 3); determining a measure responsive or related to an amount of energy required for said hybrid electric vehicle to reach a destination, wherein said measure is responsive to said at least one location of said hybrid electric vehicle in relation to said destination (step 108, [0025]); shutting down the power generator responsive to the measure in advance of the hybrid electric vehicle reaching the destination (steps 110 to 104,[0025]); and continuing travel of the hybrid electric vehicle to the destination at least using the motor powered by the energy storage device ([0025]). Vickers further describes the use of conventional engine shutdown circuit to enable and disable the engine ([0025]). Tamai explicitly describes causing a fuel flow to a power generator and generating power with the power generator responsive thereto (column 3, lines 18-31), wherein the operation of at least reducing the power generated by the power generator comprises shutting off the fuel flow to the power generator (column 3, lines 52-65). It would have been obvious to one of ordinary skill in the vehicle to use control of a fuel flow to control the engine of a vehicle because by controlling the fuel flow and thereby the engine during periods of travel, increases the efficiency of the hybrid by decreasing the amount of fuel used (column 3, lines 1-10).

Vickers describes using an internal combustion engine (gasoline or diesel [0002]) and the motor. Vickers does not describe that the ICU will continue generating power after the fuel flow is cut off. However, Kamen teaches the use of a well known Sterling external combustion engine with a hybrid vehicle system, the Sterling engine was well known in the engine art for a longer lag time between load changes, therefore it will inherently continue generating power after the fuel flow shutdown ([0048]). It would have been obvious to one of ordinary skill in the vehicle art to replace a well known engine with another well known engine, further Kamen teaches the benefits of using a Sterling engine in a hybrid: low emissions, long life and quiet operation ([0026]).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE M. BEHNCKE whose telephone number is (571)272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661